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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Gerrit Konijn

TS1194 (US)

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EXAMINER

BUSHEY, CHARLES S

ART UNIT

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1797

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/779,988	Applicant(s) KONIJN, GERRIT	
	Examiner Scott Bushey	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-8, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 38 32 420 A1 taken together with EPO 0 048 508 A2.

DE 38 32 420 A1 (Fig. 1) substantially discloses applicant's invention as recited by instant claims 1, 3-8, and 15-18, except for the plurality of vertically spaced separation trays, as now recited by amended claim 1, the bottom of the return skirt (14) being within 30% of the spacing between the upper and lower walls (6,7), counted from the lower wall, and the means for receiving the liquid enriched fluid stream being positioned adjacent the upper wall of the tray. DE 38 32 420 A1 (Fig. 1) also fails to disclose applicant's invention with respect to the at least one opening formed in the sidewall of the tubular conduit of the primary separation device and the return skirt being integrally formed with the upper wall, as recited by instant claims 3, 4, and 6-8. It is noted that Fig. 1 of the reference suggests that the bottom end of the skirt (14) is located about 3/8 or 37.5% of the spacing between the upper and lower walls (6,7), counted from the lower wall. Furthermore, the reference (Fig. 1) clearly teaches that the means for receiving the liquid enriched fluid stream (14) is positioned significantly closer to the upper horizontal wall (7) of the separation tray than to the lower horizontal wall (6)

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of the separation tray (about 61% of the distance from the lower wall to the upper wall, counting from the lower wall). Clearly one having ordinary skill in the art would recognize that the position of the bottom of the return skirt, which controls the entry point of the liquid-enriched fluid into the free inner space, would be dictated by the amount of secondary separation required and desired, the deeper within the free space that the skirt extends accounting for the pressure drop across the separation tray, which directly effects the energy input requirement to operate the separation column. Since the reference clearly discloses a return skirt height that is very similar to that as recited by applicant's instant independent claim 1, absent an unexpected showing of criticality, it would have been obvious for an artisan at the time of the invention, to modify the placement of the bottom of the return skirt to within 30% of the spacing between the upper and lower walls (6,7), counted from the lower wall, since such would provide incrementally improved phase separation in a well understood manner, albeit at the expense of increased pressure drop across the separation tray.

Similarly, wherein the specification of the instant application is silent as to the specific positioning of the means for receiving the liquid enriched fluid stream within the device, as well as what applicant's intended meaning of the term "adjacent" is relative to the positioning of the means for receiving the liquid enriched fluid stream with respect to the upper wall of the separation tray, absent an unexpected showing of criticality by applicant, it would have been obvious for an artisan at the time of the invention, to modify the placement of the means for removing and guiding the liquid enriched fluid stream, as taught by the reference, to be anywhere above the mid-point of the space

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between the upper and lower walls of the tray, in view of the teaching by the reference that suggests that the means for receiving the liquid enriched fluid stream as taught by the reference should be provided significantly above the mid-point between the lower and upper walls of the separation tray.

EPO 0 048 508 A2 (Figs. 3, 6 and 7) disclose a separation column having a plurality of vertically spaced apart separation trays, the trays including a plurality of primary separation devices each having a tubular conduit, wherein at least one opening (67) is formed in the sidewall thereof. The reference also teaches forming the return skirt (72) around the tubular conduit as being integral with the upper wall of the separation tray and the primary gas outlet tube (68) being formed without any means to restore linear flow to the primary gas downstream of the swirl-imparting means. It would have been obvious for an artisan at the time of the invention, to modify the apparatus as taught by DE 38 32 420 A1, to have multiple separation trays vertically spaced within the column, the separation devices on the trays to include at least one opening in the sidewall of the tubular conduit, and to form the return skirt integrally with the upper wall, in view of EPO 0 048 508 A2, since such would reduce the pressure drop within the primary separation device by allowing more exit area for the liquid enriched fluid from the tubular conduit, and forming the return skirt integrally with the upper wall would lend structural integrity to the upper wall. It would have also been obvious for an artisan at the time of the invention, to modify the separation devices of the primary reference to eliminate the primary gas straightening means from the primary gas outlet conduit, in

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view of EPO 0 048 508 A2, since such would also reduce the pressure drop across the separation trays.

With regard to the process limitations of newly added claims 16-18, the reference combination clearly suggests an apparatus that is capable of operating in the manner as suggested by the newly added process claims, and as such it would have been obvious for an artisan at the time of the invention, to utilize the separation means as suggested by the reference combination to operate on the streams at the conditions as recited by new claims 16-18. It is noted that claims 16-18 do not recite any manipulative steps as required of a proper process claim.

3. Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the reference combination as applied to claims 1, 3-8, and 15-18 above, and further in view of Sheinman.

The reference combination as applied to claims 1, 3-8, and 15-18 above substantially discloses applicant's invention as recited by instant claims 9-13, except for the specific recitation that the swirl imparting means are formed integrally with the bottom wall and are formed by providing the metal plate of the bottom wall with slits and then bending the segments out of the plane of the plate. While silent to the manner of forming the swirl vanes, the references of the reference combination as applied to claims 1, 3-8, and 15-18 above almost certainly form the vanes from a metal sheet or plate. Furthermore, applicant must recognize that the manner of manufacture of the swirl means is irrelevant to the patentability of the apparatus claim, if the reference(s) teach(es) the same structure. Therefore, the sequence of steps of claim 9, as well as

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the cutting step being a laser cutting step, as recited by instant claim 11, cannot be considered to impart patentability to the apparatus claims. Applicant should note that the primary reference combination clearly teach that which is recited by instant claim 13.

Sheinman (Figs. 1 and 2; col. 2, lines 41-42) teach forming a swirl imparting vane structure integrally with the bottom plate of a separator similar to that of the primary reference combination, by way of a stamping process. It should be noted that the stamping process inherently performs a slitting step immediately followed by a bending step to form the swirl vane structure. It would have been obvious for an artisan at the time of the invention, to provide the swirl vane structure, of the primary reference combination as applied to claims 1, 3-8, and 15-18 above, integrally with the bottom plate of the separator, in view of Sheinman, since such would facilitate easier assembly of the device over a structure wherein the bottom plate and the vanes were formed separately and then connected by welding, for example.

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over the reference combination as applied to claims 1, 3-8, and 15-18 above, and further in view of EP 0 331 247 A2.

The reference combination as applied to claims 1, 3-8, and 15-18 above, substantially disclose applicant's invention as recited by instant claim 14, except for the secondary gas outlet being arranged annularly around the primary gas outlet conduit.

EP 0 331 247 A2 (Figs. 1 and 2) disclose a separation device similar to that as suggested by the primary reference combination, wherein the primary gas outlet conduit (21) is surrounded by an annularly shaped secondary gas outlet (33). It would have

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been obvious for an artisan at the time of the invention, to modify the separation means as suggested by the primary reference combination, to include an annular secondary gas outlet means around the primary gas outlet conduit thereof, in view of EP 0 331 247 A2, since such would provide a compact, convenience means to allow for a secondary separation of a moisture laden gas stream within a single separation device.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 16-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 16-18 are vague and indefinite process claims since they do not recite any manipulative steps by which a proper process claim may be assessed for patentability.

Response to Arguments

7. Applicant's arguments with respect to claims 1, and 3-18 have been considered but are moot in view of the new grounds of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bushey whose telephone number is 571 272-1153. The examiner can normally be reached on M-Th 6:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Scott Bushey
Primary Examiner
Art Unit 1797

/S. B./
4-27-10

/Scott Bushey/
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